

A decorative graphic at the top of the slide shows five black silhouettes of people walking up a green, curved hill. From left to right, the figures are: a small child, a person walking, a person walking, a person walking, and a person in a graduation cap and gown.

# Indiana Department of Education

**Glenda Ritz, NBCT**

Indiana Superintendent of Public Instruction

## **ISTEP+, IMAST: Grades 4, 6 Science Cut Score Recommendations**

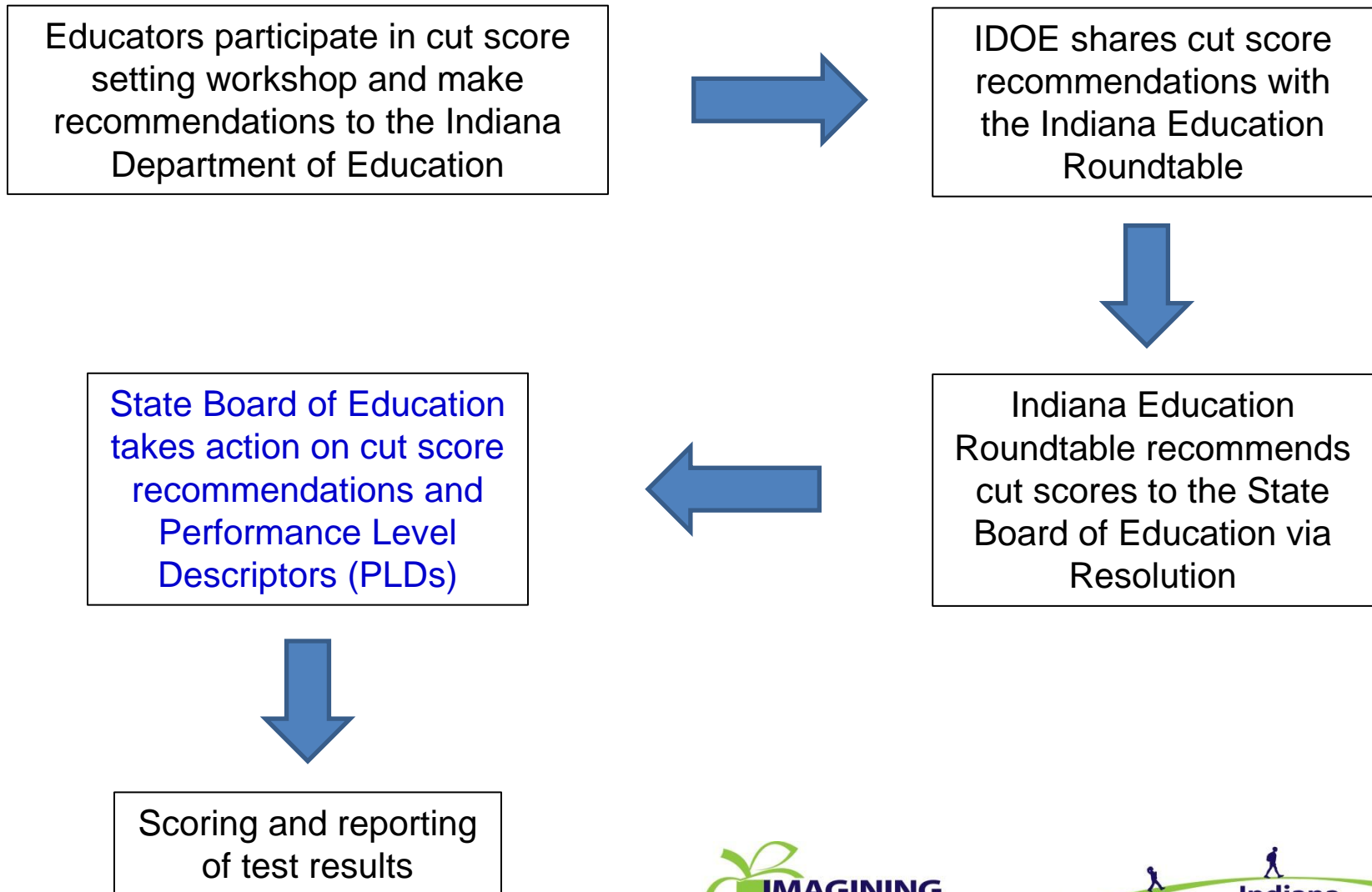
**Indiana State Board of Education  
October 2, 2013**

# ISTEP+ and NCLB

- The ISTEP+ assessments in English/Language Arts, Math and Science are required components of No Child Left Behind (NCLB).
- Every student in grades 3-8 must be assessed each year in English/Language Arts and Math.
- Science must be assessed in both the elementary (grade 4) and middle school (grade 6) grade spans.
- Social studies assessments (grade 5 & 7) are required by state law and the Assessment Plan.



# An Overview of Indiana's Process



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# Adopted Definitions

- Indiana Education Roundtable **Passing Score** Definition  
“The scores to pass these tests will be set at the levels necessary for students to demonstrate **solid academic performance** on the standards.”
- Indiana Education Roundtable **Pass-Plus** Definition  
“The scores to demonstrate ‘pass-plus’ on these tests will be set at the levels necessary for students to demonstrate **exemplary academic performance** on the standards.”



# Cut Score Setting Workshop

- Guided by *Bookmark Standard Setting* process and *Indiana Education Roundtable Resolution* from October 12, 2004
- Participants included 75 educators
  - Represented expertise in science content and students with disabilities
  - Statistically represented Indiana's students
    - Based on “attributes”
      - Geographic location (north, central, south)
      - Type of community (urban, suburban, rural)
      - Socioeconomic status (high or low poverty)
    - Three attributes combine to form a “cell.”
      - Sample school cell: south / urban / high poverty
      - 18 cells across Indiana



# Cut Score Setting Process

- Cut Score Setting Workshop: June 25-27
  - Process facilitated by vendor (CTB/McGraw-Hill)
    - Participants studied “Ordered Item” booklets
      - Items arranged from least to most difficult
      - Based on student performance statistics from Spring 2013 test
    - Each participant set 3 rounds of bookmarks, with one exception:
      - ISTEP+ Grade 4 panelists requested and set a 4<sup>th</sup> round
    - Discussion occurred before and after each round; bookmarks always set as individuals
    - Panelists reviewed impact data after subsequent rounds and prior to final bookmark placement
    - Recommendations from educators include:
      - **Median** of individual bookmark placements (*Pass, Pass+*)
      - **Draft** Performance Level Descriptors (*Did Not Pass, Pass, Pass+*)



# Cut Score Setting Review

- Expert Panel Members
  - Dr. Huynh Huynh
  - Dr. Meagan Karvonen
- Observed the Cut Score Setting on June 25-27
  - Appropriate process facilitated by vendor
    - Included training to enable completion of required tasks
  - Content-based discussions and recommendations
- Formal “Expert Panel” meeting with IDOE on June 27
  - Reviewed cut score setting process
  - Analyzed teacher recommendations and results
  - Provided feedback and technical advice to the IDOE with regard to cut score recommendations



# Resolution: Recommends Cut Scores

## Indiana Education Roundtable Recommendation: ISTEP+ Science Cut Scores

Grade	Pass	Pass+
4	410	470
6	467	531

## Indiana Education Roundtable Recommendation: IMAST Science Cut Scores

Grade	Pass	Pass+
4	476	535
6	474	527





# A View of the Data: ISTEP+

## Recommended Cut Scores: *Pass*

Grade	IER* (IDOE)	Educator	Minimum Score	Maximum Score
4	410	410	200	750
6	467	467	200	765

## Recommended Cut Scores: *Pass+*

Grade	IER* (IDOE)	Educator	Minimum Score	Maximum Score
4	470	470	200	750
6	<u>531</u>	522	200	765

\*Indiana Education Roundtable



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# A View of the Data: IMAST

## Recommended Cut Scores: *Pass*

Grade	IER* (IDOE)	Educator	Minimum Score	Maximum Score
4	476	476	200	750
6	<u>474</u>	486	200	765

## Recommended Cut Scores: *Pass+*

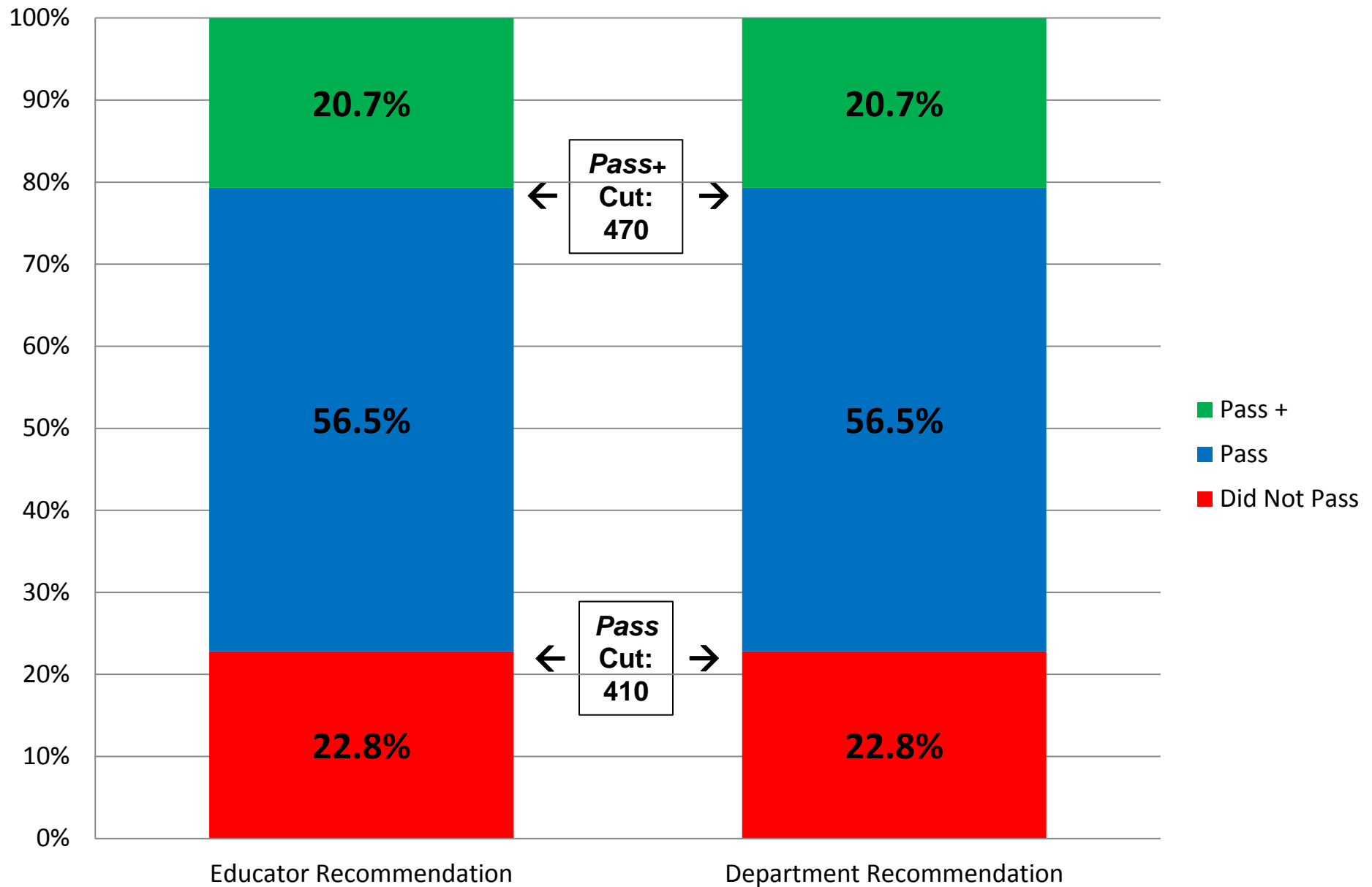
Grade	IER* (IDOE)	Educator	Minimum Score	Maximum Score
4	<u>535</u>	525	200	750
6	527	527	200	765

\*Indiana Education Roundtable



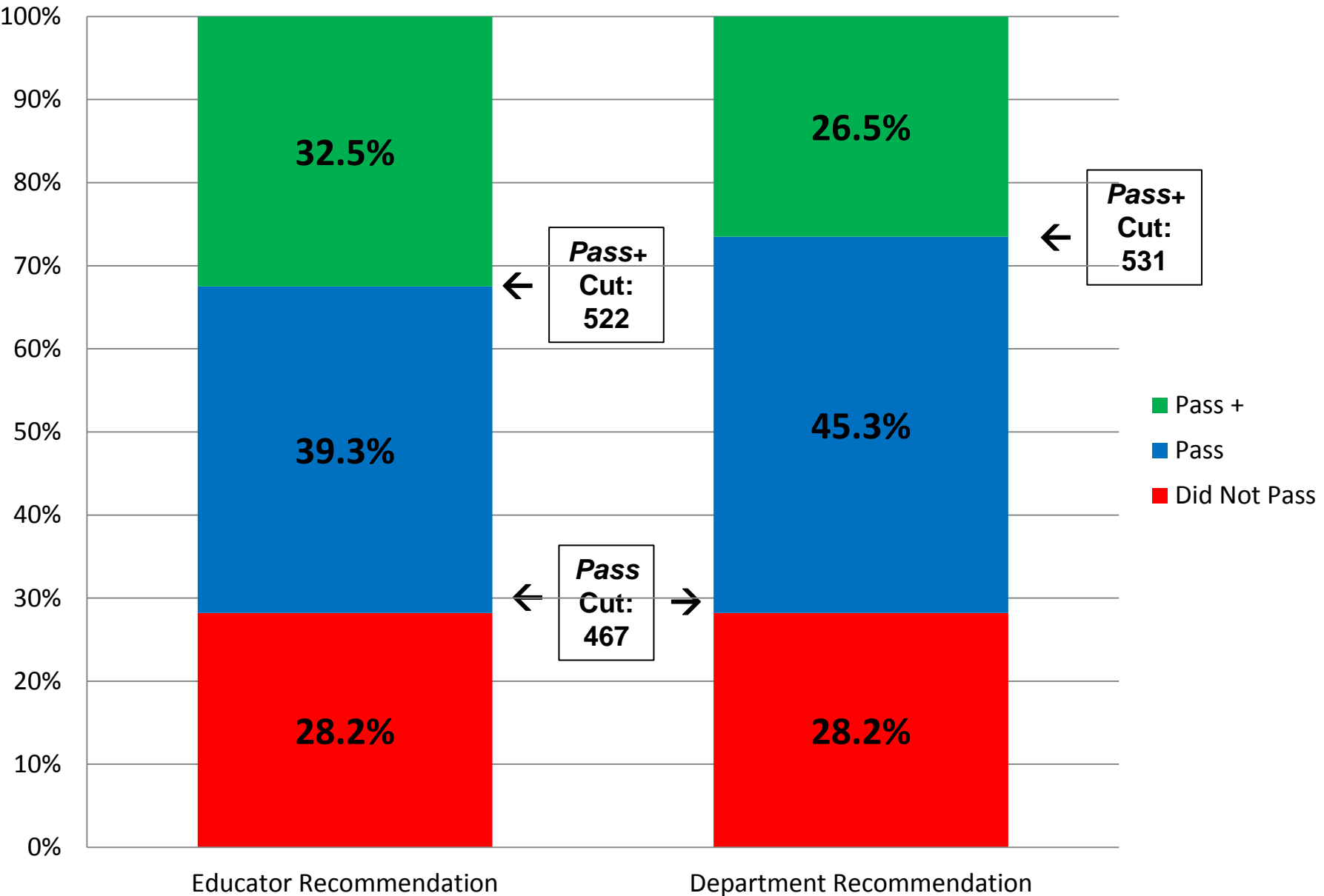
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# ISTEP+ Grade 4: Percent of Students by Performance Level



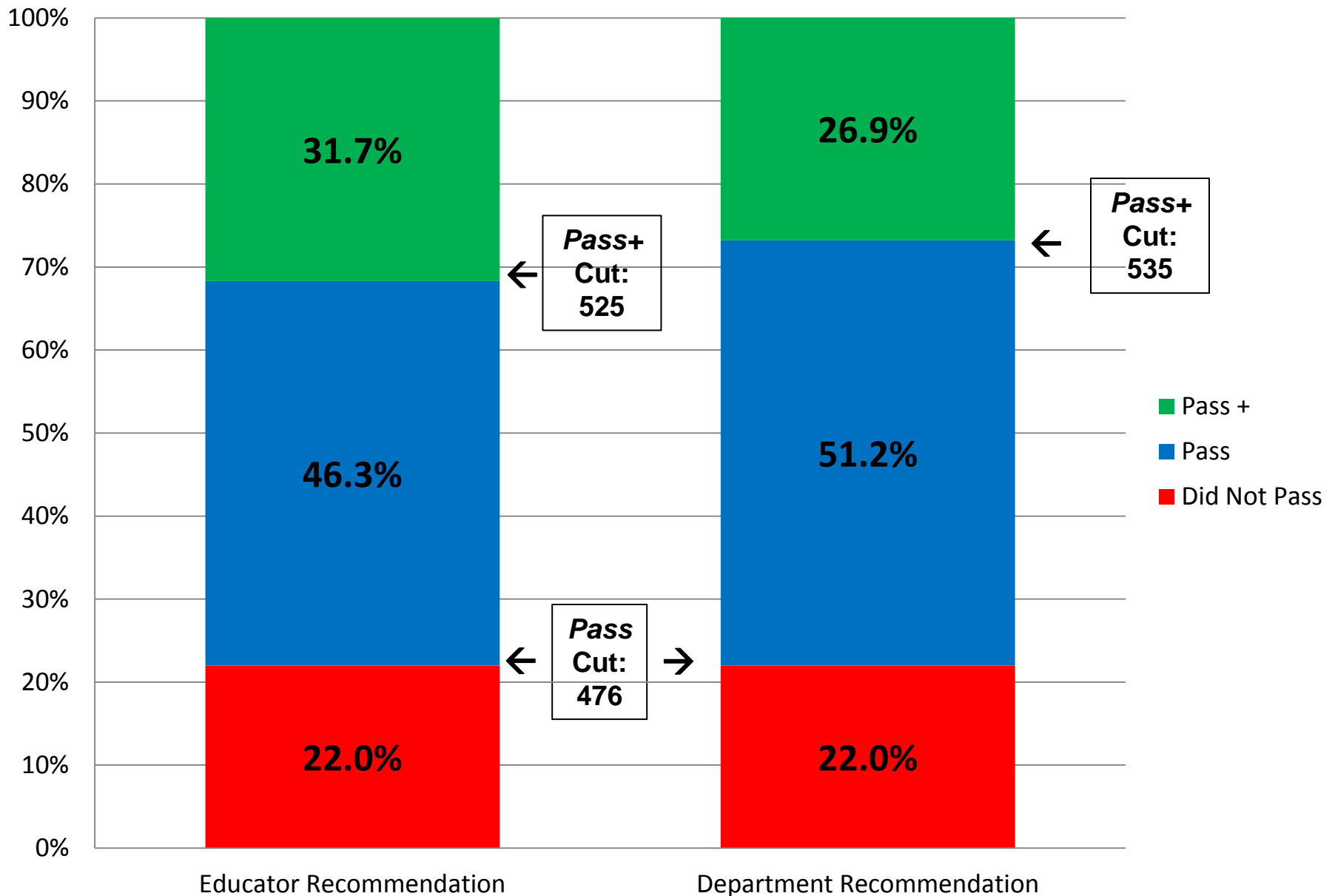
**IDOE and Educator Recommendations → same for *Pass*, *Pass+***

ISTEP+ Grade 6: Percent of Students by Performance Level



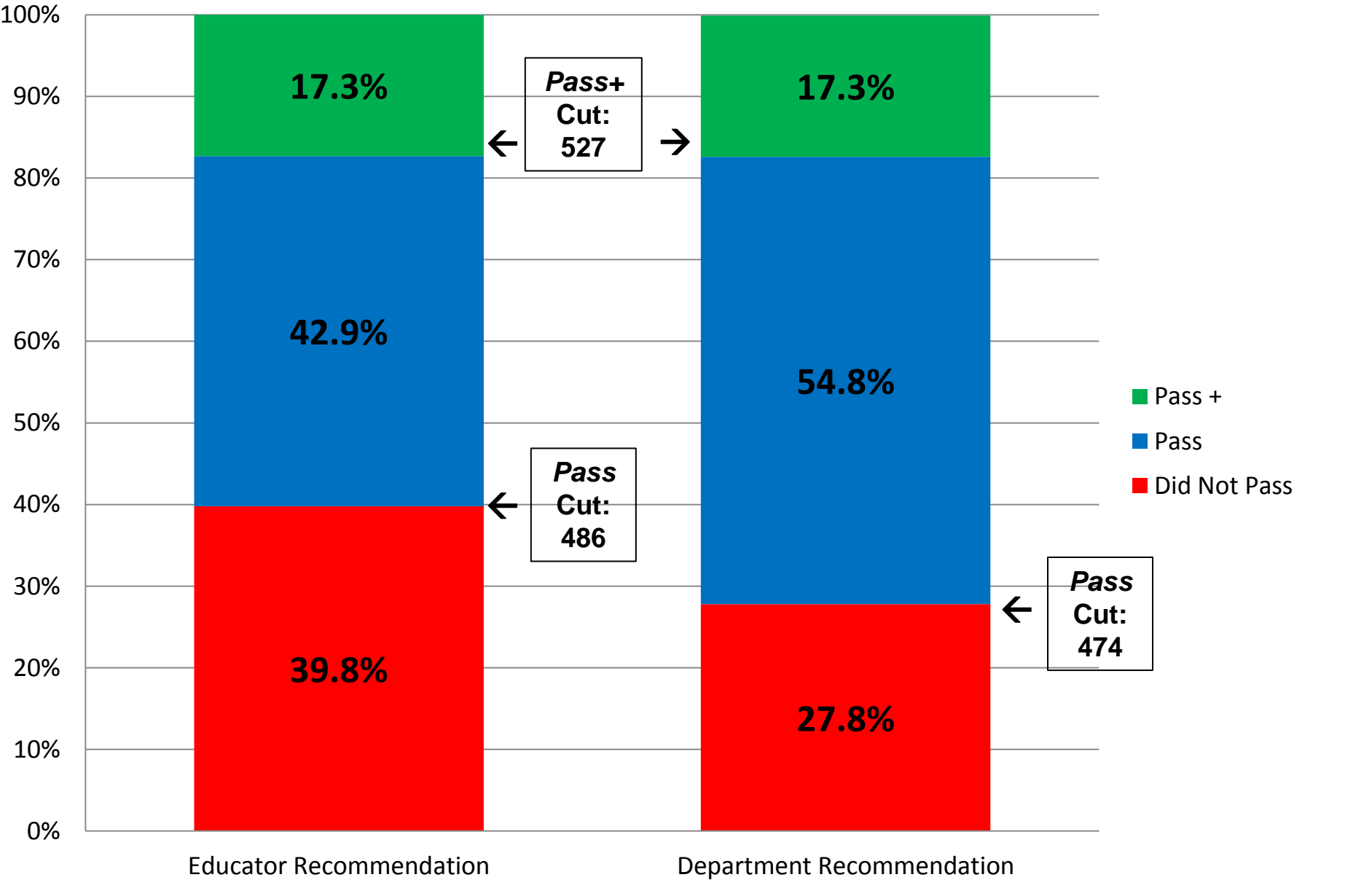
**IDOE and Educator Recommendations → same for *Pass*; +0.5 Std Error for *Pass+***

## IMAST Grade 4: Percent of Students by Performance Level



**IDOE and Educator Recommendations → same for *Pass*; +0.5 Std Error for *Pass+***

IMAST Grade 6: Percent of Students by Performance Level



**IDOE and Educator Recommendations → -0.6 Std Error for *Pass*; same for *Pass+***

# Scoring the Tests – Part 1

- It is important to note that **the tests are not scored based on “percent correct.”**
- Like ECAs and IREAD-3, ISTEP+ and IMAST utilize ***pattern scoring*** to determine results on the assessment.
  - Pattern scoring analyzes a student’s responses to all of the items on the test (ranging from easy to difficult), and ascertains the degree to which the student demonstrates knowledge, skills, and abilities.
- *In contrast, **number or percent-correct scoring** simply notes whether a student answered items correctly.*



# Scoring the Tests – Part 2

- To illustrate the differences between ***pattern scoring*** and ***percent correct***, consider two students who both correctly answer 20 items on the test.
  - Student 1 correctly answers the 20 most difficult items;
  - Student 2 correctly responds to 20 of the easiest items.
- With ***percent correct***, both students receive the same score.
- When the ***pattern of the items answered correctly*** is taken into account (including the difficulty of the items), Student 1 rightly receives a higher score.





# Performance Level Descriptors

- Referred to as “PLDs”
- Describe knowledge, skills and abilities at each performance level
  - *Pass+*
  - *Pass*
  - *Did Not Pass*
- ISTEP+ and IMAST PLDs
  - Presented for State Board of Education consideration



# State Board Action Requested

- **Approval of cut score recommendations** from Indiana Education Roundtable via Resolution
  - ISTEP+ Science – Grades 4, 6
  - IMAST Science – Grades 4, 6
- **Approval of Performance Level Descriptors (PLDs)** for ISTEP+ and IMAST Science, Grades 4 and 6
  - *Pass+*
  - *Pass*
  - *Did Not Pass*



# Questions?

## Thank You

Dr. Michele Walker, Director  
Office of Student Assessment



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